

Rec'd POST 10/521545
14 JAN 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number
WO 2004/006820 A3

(51) International Patent Classification⁷: **B60T 1/02**

40503 (US). DONALDSON, Bruce, S [US/US]; 270 Clearview Drive, Lexington, KY 40503 (US).

(21) International Application Number:
PCT/US2003/022286

(74) Agents: SCHICKLI, Warren, D. et al.; King and Schickli, PLLC, 247 North Broadway, Lexington, KY 40507 (US).

(22) International Filing Date: 17 July 2003 (17.07.2003)

(25) Filing Language: English

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(26) Publication Language: English

(30) Priority Data:
60/396,918 17 July 2002 (17.07.2002) US

(71) Applicant (*for all designated States except US*):
LAWRENCE-NELSON, LLC [US/US]; 315 S. Broadway Park, Lexington, KY 40504 (US).

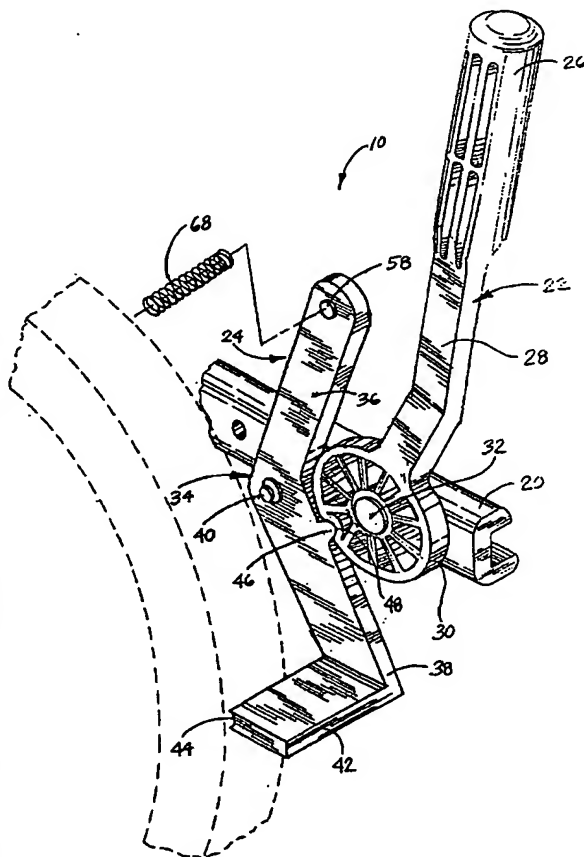
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): TANKSLEY, Keith, A. [US/US]; 1380 Groggins Ferry, Nicholasville, KY

[Continued on next page]

(54) Title: WHEELCHAIR WHEEL IMMOBILIZER



(57) Abstract: A wheel immobilizer (10, 54) for substantially preventing rotation of a wheelchair wheel or tire about a central axis thereof is provided comprising a pivoting wheel stop (24) carrying a detent (46) and a rotating cam (30) having a receiver (48). The detent seats in the receiver when the wheel immobilizer is in an unlocked position (with the wheel stop held at a spaced distance from the wheel) to allow rotation thereof. A lever (22) is operably connected to the cam, whereby actuating the lever rotates the cam and unseats the detent from the receiver, urging a wheel-contacting surface (42) of the wheel stop into locking contact with the wheel. In another aspect, a wheel locking assembly is provided comprising paired wheel immobilizers as described which may be operated independently. In still another aspect, a wheel locking assembly is provided comprising a first and second wheel immobilizer, wherein the first and second wheel immobilizers are operably linked by a flexible linkage (56).

WO 2004/006820 A3

BEST AVAILABLE COPY



ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the International search report:
1 April 2004

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/22286

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B60T 1/02
 US CL : 280/304.1;188/2F

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 280/250.1,304.1;188/2F, 2D, 31, 33, 68, 69

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 BRS on EAST text search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2001/0018997 A1 (SUGANUMA) 06 September 2001 (06.09.2001), see entire document.	1-10
Y	US 5,145,197 A (GATTI) 08 September 1992 (08.09.1992), see Figure 14.	11-13
A	US 5,174,418 A (LE et al.) 29 December 1992 (29.12.1992), see entire document.	1-13
A,P	US 6,578,860 B1 (CHANG) 17 June 2003 (17.06.2003), see entire document.	11-13
A	EP 0,204,040 A (STRAUSS) 10 December 1986 (10.12.1986), see entire document.	1-13
A	US 6,170,615 B1 (CHENG) 09 January 2001 (09.01.2001), see entire document.	1-13

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

01 December 2003 (01.12.2003)

Date of mailing of the international search report

19 FEB 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

Anne Marie M. Boehler

Telephone No. 703-308-1113